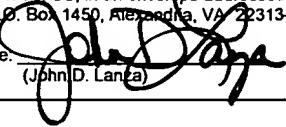


FEB 14 2005

I hereby certify that the correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV466147617US, in an envelope addressed to: MS RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.
Dated: 02/14/05 Signature: 
(John D. Lanza)

Docket No.: MIT-003RCE
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Douglas P. Hart

Application No.: 09/616606

Art Unit: 2623

Filed: July 14, 2000

Examiner: R. J. Hesselstine

For: METHOD AND SYSTEM FOR HIGH
RESOLUTION, ULTRA FAST 3-D IMAGING

RECEIVED

FEB 22 2005

Technology Center 2600

DECLARATION PURSUANT TO 37 CFR §1.132

MS RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Declaration is submitted pursuant to 37 C.F.R. §1.132 to present evidence that U.S. Patent No. 6,278,847 (hereinafter "Gharib") and the Hsueh reference ("Real-time 3D topography by speckled image correlation") cited by the U.S. Patent and Trademark Office during examination does not suggest to one of ordinary skill in the art the invention claimed by U.S. Patent No. 09/616,606.

Pursuant to 37 C.F.R. §1.132, the undersigned hereby declares as follows:

- (1) I am an Assistant Professor in the Department of Mechanical Engineering at the Massachusetts Institute of Technology. My field of expertise is optics, particularly three-dimensional (3D) optical systems. A copy of my curriculum vitae is attached as Exhibit A.
- (2) I have reviewed U.S. Patent Application No. 09/616,606, the Office Action dated 7/15/2004, the Hsueh reference cited in the Office Action dated 7/15/2004, and U.S. Patent No. 6,278,847 ("Gharib") cited in the Office Action dated 7/15/2004.

- (3) I have read and understand the requirements for obviousness as set forth under 35 USC §103.
- (4) The subject matter of independent claims 1, 7, 10, and 16, specifically the aperture element that is rotated to acquire at least two images is not suggested by Hsueh and Gharib.
- (5) Gharib does not disclose a moveable aperture. Instead, Gharib discloses an imaging element having multiple apertures that are selectively blocked by a moveable blocking element.
- (6) One of ordinary skill in the art would not consider systems that use a moveable blocking element to selectively block one of several apertures interchangeable with an image acquisition subsystem using a moveable aperture to acquire multiple images for systems. Systems like Gharib that use fixed, multi-aperture imaging are fundamentally different from systems having moveable apertures for a number of reasons.
- (7) It is well known in the art that the spatial resolution of a fixed aperture system, that is, the smallest feature of an image that may be successfully imaged by such a system, is limited by the minimum distance between apertures. Similarly, control over image exposure is limited by the aperture diameter, which is fixed. Despite the fact that imaging systems providing multiple, fixed apertures have existed for many years, no imaging system has solved the problems inherent in fixed, multi-aperture systems until now.
- (8) One skilled in the art would recognize that the invention recited by the claims of the instant application have improved spatial resolution and exposure control because it is the aperture that moves, not a blocking element associated with one of many apertures. Since the aperture may be moved over the image, the spatial resolution of the imaging system is limited only by the frame rate of the CCD camera and the speed at which the rotating aperture is moved. This innovation constitutes a fundamental improvement over the art disclosed by Gharib.
- (9) I hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so

Application No.: 09/616606

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made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this Application for Patent or any patent issuing thereon.



George Barbastathis, Phd.
Esther and Haraold E. Edgerton
Assistant Professor
Department of Mechanical Engineering
Massachusetts Institute of Technology

02/07/05
Date